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Web-based Statistic Reporting Tool

Brett Hays
Indiana University - Purdue University Fort Wayne

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The project that has been completed is a Web-based Statistic Reporting Tool. The purpose of this project was to enhance and rewrite some scripts for ITT A/CD to make them more efficient and flexible. The original scripts had been written a year ago when the author was first learning the perl programming language. The purpose of this report is to explain what changes have been made and how the program works.

Three windows computers were used for testing, MAL9000, HAL9000, and HAL9000-1. The scripts were rewritten and executed on Linus, a Linux Redhat 8.0 computer. Linus is also a samba, and apache server. Samba and apache are programs that come bundled with Redhat 8.0. The author decided to use his computers instead of the computers at ITT because it would be a more controlled environment to work in and adjustments could be made more easily.

The following is the old way the scripts generated the graphs.

- The Microsoft Performance Monitor records the statistics and saves them to one of Linus' samba shares.
- Two scripts alternate execution and execute every half hour. So a script is running every fifteen minutes.
- The first script reads a variable in the script that tells it what servers it should read the data from.
- The script then reads through the stored data and breaks it up into individual .dat files. These .dat files are used because they are easier for the human eye to decipher.
- The second script reads a variable in the script that tells it what servers it should read the data from.
- Then the script processes the .dat files and generates .new files which are then used to graph a .pbm image.
- The .pbm image is then converted to a .gif image.

The following is the new way the scripts generate graphs.

- The Microsoft Performance Monitor records the statistics and saves them to one of Linus' samba shares.
- Two scripts alternate execution and execute every half hour. So a script is running every fifteen minutes.
- The first script reads a configuration file which tells it what servers, statistics should be read/processed per computer, and what operating system each computer is running.
- The script then reads through the stored data and breaks it up into individual .dat files. These .dat files are used because they are easier for the human eye to decipher.
- Before the script is completed it executes another script that generates html files based on the same configuration file.

- The first script reads a configuration file which tells it what servers, statistics should be read/processed per computer, and what operating system each computer is running.
- The second script runs and processes the .dat files and generates .new files which are then used to graph a .png image.
- Before the script is completed it executes another script that generates html files based on the same configuration file.

One advantage to this change is that there used to be 8 files that had to be changed when a server alteration was made. Because the new scripts use this approach only the configuration file has to be altered when a server is to be added or removed. Therefore, fewer errors can be made when a server is added or removed. A more detailed process breakdown is in Appendix A.

Another advantage is there is a dramatic speed increase in just plotting a image to use versus plotting an image and then converting it. The previous method wasted hard drive space since a pbm file is about 1 megabyte. The method also wasted cpu resources converting from a worthless image to a useable image. There is little to no size difference between a .png and a .gif file.

Linus uses a program called crontab to schedule script execution. Crontab allows a programmer the ability to schedule a script to run any minute, hour, day of the month, month of the year, or day of the week. Linus' crontab file is in Appendix A. There is also a brief description of the programs in Appendix A.

Something that is completely new is that Linus not only collects and processes statistics for the windows machines but it also collects and processes statistics for itself. It does this in much the same way that the windows process works.

- Linus gets its statistical data from a program called top. Unfortunately a script that contains instruction to execute top can not be run correctly in crontab so the script has to be started after that machine starts.
- A script runs every fifteen minutes that breaks the one file into several .dat files.
- After that it generates .new files and graphs images

The images are displayed through a web server called apache. When the initial webpage loads there is a JavaScript menu on the left frame and an html page on the right. The menu expands and contracts according to the user's selection. This is a new feature since before on the left there was just an html page with a makeshift menu that was always expanded. A more detailed description of the webpage layout is in Appendix A.

All of the code that has been written is available in Appendix B.